must use the data obtained according to ANSI STD S3.19–1974.

[45 FR 8275, Feb. 6, 1980]

§§ 211.206–3—211.206–10 Alternative test methods. [Reserved]

§ 211.207 Computation of the noise reduction rating (NRR).

Calculate the NRR for hearing protective devices by substituting the average attenuation values and standard deviations for the pertinent protector category for the sample data used in steps #6 and #7 in Figure 2. The values of −.2, 0, 0, 0, −.2, −.8, −3.0 in Step 2 and −16.1, −8.6, −3.2, 0, +1.2, +1.0, −1.1 in Step 4 of Figure 2 represent the standard ''C''- and ''A''-weighting relative response corrections applied to any sound levels at the indicated octave band center frequencies. (NOTE: The manufacturer may label the protector at values lower than indicated by the test results and this computation procedure, e.g. lower NRR from lower attenuation values. (Ref. § 211.211(b).)

FIGURE 2—COMPUTATION OF THE NOISE REDUCTION RATING

Octave band center frequency (Hz)	125	250	500	1000	2000	3000	4000	6000	8000
1 Assumed Pink noise (dB)	100	100	100	100	100	.....	100	.....	100
2 ''C'' weighting corrections (dB)	−.2	0	0	0	−.2	.....	−.8	.....	−3.0
3 Unprotected ear ''C''-weighted level (dB)	99.8	100	100	100	99.8	.....	99.2	.....	97.0
(The seven logarithmically added ''C''-weighted sound pressure levels of Step #3 =107.9 dS)									
4 ''A''-weighting corrections (dB)	−16.1	−8.6	−3.2	0	+1.2	.....	+1.0	.....	−1.1
5 Unprotected ear ''A''-weighted level (step #1-step #4) (dB)	83.9	91.4	96.8	100	101.2	.....	101	.....	98.9
6 Average attenuation in dB at frequency	21	22	23	29	41	.....	(43+47)/2=45	.....	(41+36)/2=38.5
7 Standard deviation in dB at frequency	3.7	3.3	3.8	4.7	3.3	.....	(3.3+3.4)=6.7	.....	(6.1+6.5)=12.6
	×2	×2	×2	×2	×2	.....	.....	.....	.....
	7.4	6.6	7.6	9.4	6.6	.....	.....	.....	.....
8 Step #5-(step #6-step #7) develops the protected ear ''A'' weighted levels (dB)	70.3	76.0	81.4	80.4	66.8	.....	62.7	.....	73.0
(The seven logarithmically added ''A''-weighted sound pressure levels of Step #8 using this sample data=85.1 dB)									

9 NRR=Step #3—Step #8—3 dB*; =107.9 dB—85.1 dB—3 dB*; =19.8 dB (or 20) (Round values ending in .5 to next lower whole number).

*Spectral uncertainty (as defined in § 211.203).

The value for #3 is constant. Use Logarithmic mathematics to determine the combined value of protected ear levels (Step #8) which is used in Step #9 to exactly derive the NRR; or use the following table as a substitute for logarithmic mathematics to determine the value of Step #8 and thus very closely approximate the NRR.

Difference between any two sound pressure levels being combined (dB)	Add this level to the higher of the two levels (dB)
0 to less than 1.5	3
1.5 to less than 4.5	2
4.5 to 9	1
Greater than 9	0

§ 211.208 Export provisions.

(a) The outside of each package or container containing a hearing protective device intended solely for export must be so labeled or marked. This will include all packages or containers that are used for shipping, transporting, or dispersing the hearing protective device along with any individual packaging.

(b) In addition, the manufacturer of a hearing protective device intended solely for export is subject to the export exemption requirements of § 211.110–3 of subpart A.

(Sec. 10(b)(2), Pub. L. 92–574, 86 Stat. 1242 (42 U.S.C. 4909(b)(2)))